

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte AKIHISA OKUMURA, MASAO HORI, HIDEKI GOTOH,  
and MAKOTO HORIUCHI

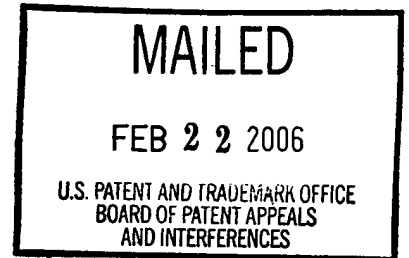
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Appeal No. 2006-0446  
Application No. 09/778,103

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ON BRIEF

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Before KIMLIN, TIMM and JEFFREY T. SMITH, Administrative Patent Judges.

KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 18-23.

Claim 18 is illustrative:

18. An exhaust-gas purifying process comprising:

preparing a catalyst for purifying exhaust gas by forming the catalyst of iridium, a rare earth metal oxide, and sulfur; and at least one element selected from a group consisting of calcium, strontium and barium, as catalyst active substances, wherein the iridium forms a complex oxide with said at least one element;

setting an exhaust-gas temperature in a range of 200°C to 700°C at an inlet to the catalyst for purifying the exhaust gas; and

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directing the exhaust gas from an internal combustion engine through the catalyst for purifying the exhaust gas so as to reduce nitrogen oxides in the exhaust gas.

The examiner relies upon the following references as evidence of obviousness:

Lauder	4,049,583	Sep. 20, 1977
Nakatsuji et al.	EP 0 624 393 A1	Nov. 17, 1994
(Published European Patent Office Application)		
Shigeru et al. (Shigeru)	07-080315	Mar. 28, 1995
(Published Japanese Patent application)		

Appellants' claimed invention is directed to a process for purifying exhaust gas. The process entails directing the exhaust gas through a catalyst comprising iridium, a rare earth metal oxide, sulfur and at least one element selected from the group consisting of calcium, strontium and barium.

Appealed claims 18-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lauder in view of Shigeru.

We have thoroughly reviewed each of appellants' arguments for patentability. However, we are in complete agreement with the examiner that the claimed subject matter would have been obvious to one of ordinary skill in the art within the meaning of Section 103 in view of the applied prior art. Since we fully concur with the examiner's reasoning and application of the prior art, as well as her cogent disposition of the arguments raised by

appellants, we will adopt the examiner's reasoning as our own.  
We add the following for emphasis only.

There is no dispute that Lauder, like appellants, discloses a catalyst composition for purifying exhaust gases from internal combustion engines comprising the presently claimed metal oxide compounds, iridium, and either calcium or strontium. As recognized by the examiner, Lauder does not teach the presence of sulfur in the catalyst composition. However, the examiner properly finds that Shigeru "teaches the suitability of sulfated supports as carriers for catalysts in the purification of exhaust gases and further teaches the equivalence of these sulfated supports to the alumina, zirconia, and silica supports taught by Lauder" (page 4 of answer, last full sentence). Accordingly, based on the collective teachings of Lauder and Shigeru, we find that the examiner has formed the appropriate legal conclusion that "[b]ecause of the art recognized functional equivalence of the sulfated supports taught by Shigeru et al. to the supports taught by Lauder as carriers for catalysts useful in the purification of exhaust gases, it would have been obvious to one of ordinary skill to have substituted one known component for the other in the catalyst taught by Lauder" (sentence bridging pages 4 and 5 of the answer).

Appellants contend that since the  $ABO_3$  catalyst structure of Lauder does not include sulfur, "[i]t would not have been obvious to modify or abandon the  $ABO_3$  crystal structure to form the claimed invention" (page 8 of brief, penultimate paragraph). Appellants maintain that Lauder teaches away from a non- $ABO_3$  crystal structure and that "Lauder cannot be properly applied to reject a non- $ABO_3$ " (page 9 of brief, last paragraph). However, the examiner correctly states that appellants' argument is not commensurate in scope with the degree of protection sought by the appealed claims. Appellants' specification does not define the claimed complex oxide as a non- $ABO_3$  structure and, indeed, "the illustrative structures of suitable complex oxides include  $ABO_3$  compositions" (page 6 of answer, first paragraph, referencing paragraph [0090] of the instant specification). As explained by the examiner, "there is nothing in the language of the instant claims which would preclude the use of an  $ABO_3$  oxide, such as the oxide material taught by Lauder." Id.

We are also not persuaded by appellants' argument that "[s]ulfur is not a constituent of the  $ABO_3$  crystal structure disclosed in Lauder" (page 10 of brief, first paragraph).

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Appellants' argument misses the thrust of the examiner's rejection, which involves substituting the sulfate supports of Shigeru for the functionally equivalent supports taught by Lauder. Such a substitution for the support would not compromise the integrity of the  $ABO_3$  crystal structure of Lauder, and the examiner is correct in stating that columns 12-13 of Lauder indicate that "the support materials are not particularly limited" (page 7 of answer, first paragraph).


As a final point, we note that appellants base no argument upon objective evidence of nonobviousness, such as unexpected results, which would serve to rebut the inference of obviousness established by the applied prior art.


In conclusion, based on the foregoing and the reasons well-stated by the examiner, the examiner's decision rejecting the appealed claims is affirmed.


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No time period for taking any subsequent action in  
connection with this appeal may be extended under 37 CFR  
§ 1.136(a).

AFFIRMED

  
EDWARD C. KIMLIN )  
Administrative Patent Judge )

  
CATHERINE TIMM )  
Administrative Patent Judge )

  
JEFFREY T. SMITH )  
Administrative Patent Judge )

BOARD OF PATENT  
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